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CORE SEARCH.(U)
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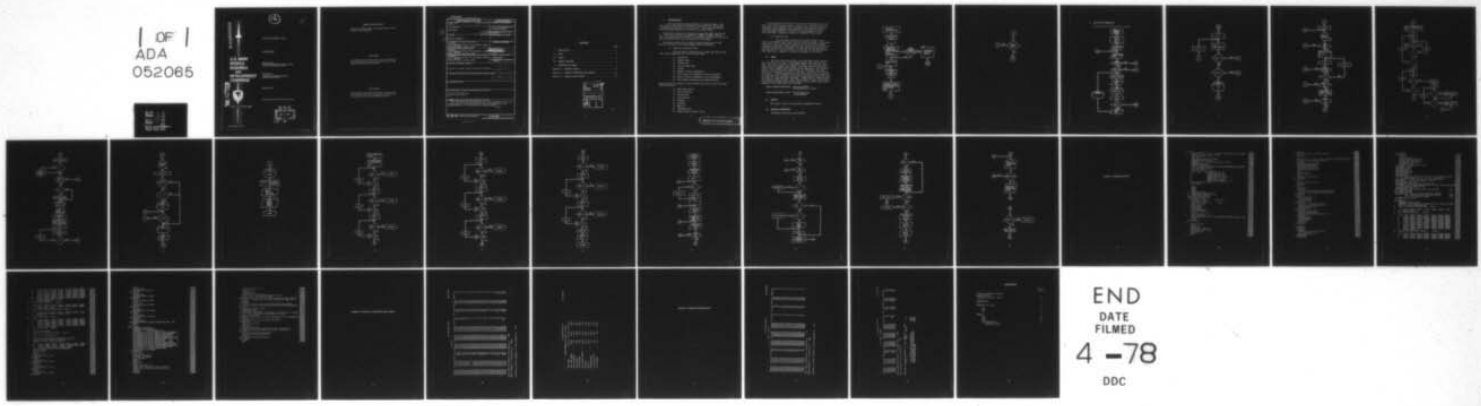

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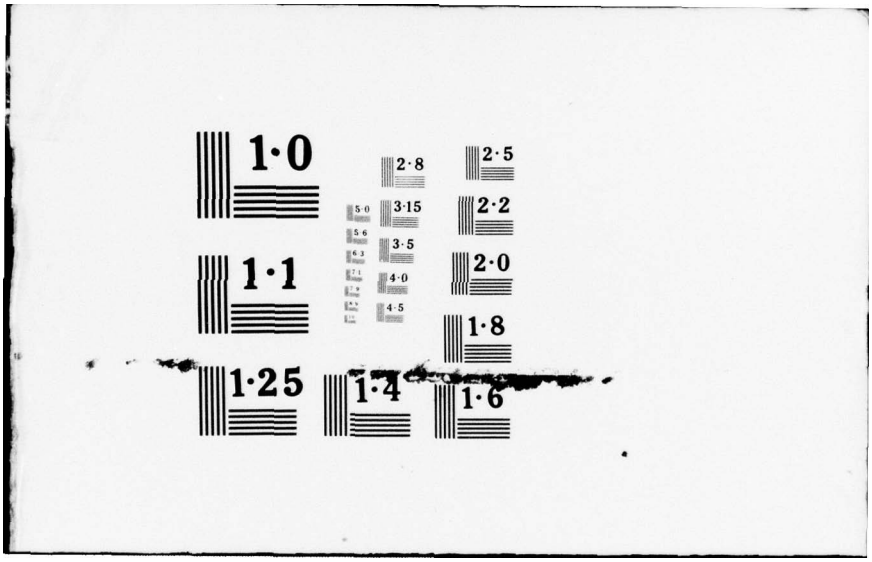
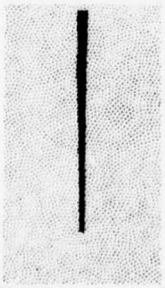

1·0
1·1
1·25
1·4
1·6
1·8
2·0
2·2
2·5
2·8
3·15
3·5
4·0
4·5
5·0
5·6
6·3

(12)

U.S. ARMY MISSILE RESEARCH AND DEVELOPMENT COMMAND

Redstone Arsenal, Alabama 35809



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TECHNICAL REPORT T-78-37

CORE SEARCH

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Directorate for Management Information Systems
US Army Missile Readiness Command

PREPARED FOR
GUIDANCE AND CONTROL DIRECTORATE
TECHNOLOGY LABORATORY

December 1977

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Search by functional area
Search by book section
20. ABSTRACT (Continue on reverse side if necessary and identify by block number):
The Core Search program provides the user with a tabulation of the core storage, number of direct statements and total statements used by each program/subroutine in the weapon control computer software.

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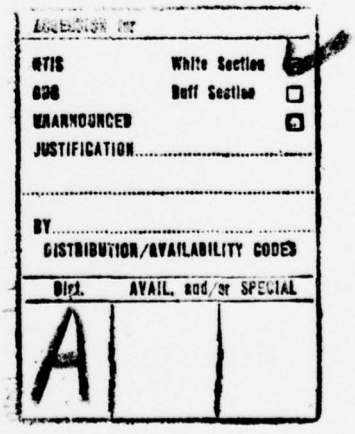
CONTENTS



I. INTRODUCTION

The Core Search program generates two types of output. The first type is generated by the search by functional area; the second is generated by the search by book section. The output from the different sections presents the information in a table format.

The search by functional area section scans the input tape looking for certain key words such as PROGRAM ID, NUMBER OF DIRECT, ORIGIN, etc. As each key word is located, the pertinent information is stored for output and later use by the next section of the program.

The search by book section takes the data located by the first section and sorts it into the necessary order for printing.

A. Search by Functional Areas

The Core Search program scans an output tape (print tape) from a build compilation for the following items:

1) Program ID.
2) Compool used.
3) Program size.
4) Local storage used.
5) Origin.
6) Number of direct statements.
7) Total number of statements (jovial and direct).
8) Ratio of direct statements to total statements.
9) Book number containing the software listing.

These data are then listed in tables broken down into the nine functional areas as follows:

1) Real-time control.
2) Data collection.
3) Surveillance.
4) Initilization.
5) Display.
6) Guidance.
7) EDWA II.
8) Communications.
9) Identification friend or foe.

A group labelled test drivers is used for all software that is not part of the nine functional areas. After all the functional areas are tabulated, a final summary table is printed which contains the sum of all direct code statements, total statements, and ratio of direct to total statements, and ratio of direct to total statements for each functional area. Appendix B contains an example of this output.

B. Search by Book

The data used to generate the tables of data in the search by functional area section are sorted by book number. The results of the sort yield a table which contains a list of all the software contained in each book. This listing is very useful when the listing of a particular subroutine is desired. The user can scan the contents of each book until it is found, then go to that book for the desired software compilation. Appendix C contains an example of this output.

II. INPUT

The first card read contains the build number associated with the input tapes to be read. This program requires one card per input tape. The card is read by an A6,4X,10I5 format. The first six charaters contain the magnetic tape number. This tape was created during a weapon control computer (WCC) software build compliation. The remaining inputs on the card are book numbers which are contained on the tape. Each book is contained in one file on the tape. A maximum of ten books is allowed. A program modification would be required to permit more than ten books per tape. A blank or zero book number signals the program that all books on a tape have been processed. A negative book numbers signals the program to skip one file. This option allows the user to skip files that have bad records, short records, parity errors, and/or other errors. Examples of the input cards are as follows:

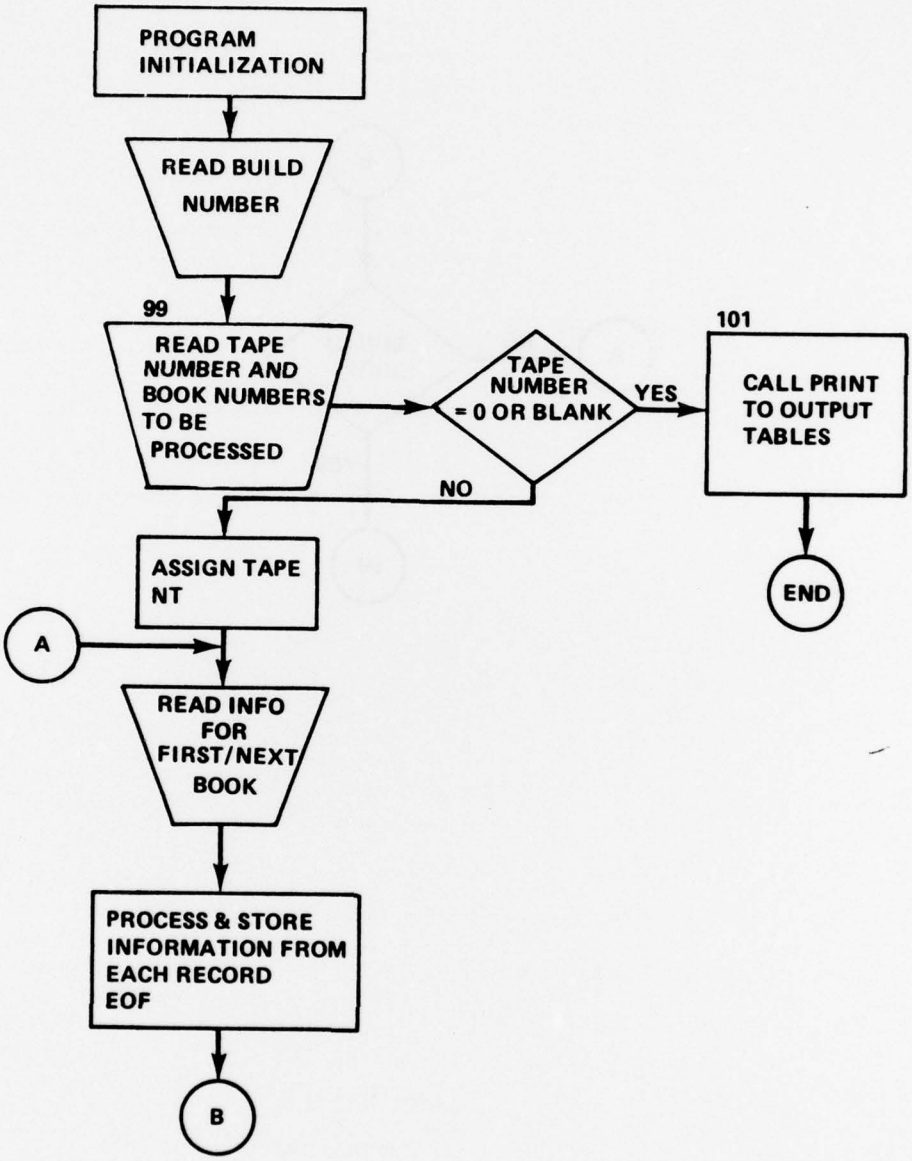
M00258 6666666636666566668	Reads tape M00258. Contains books 3, 5, and 8.
M00500 666666610666-166610	Skips second file on tape M00500.

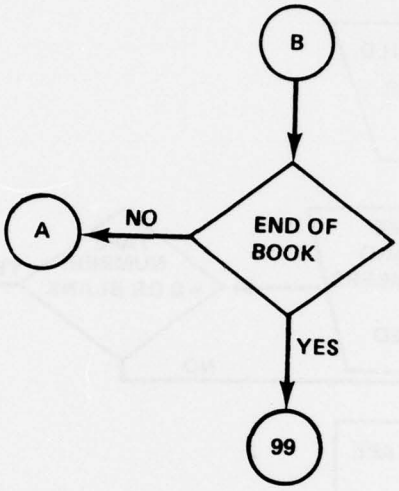
III. OUTPUT

The output formats are contained in Appendices B and C.

IV. GENERAL FLOWCHART

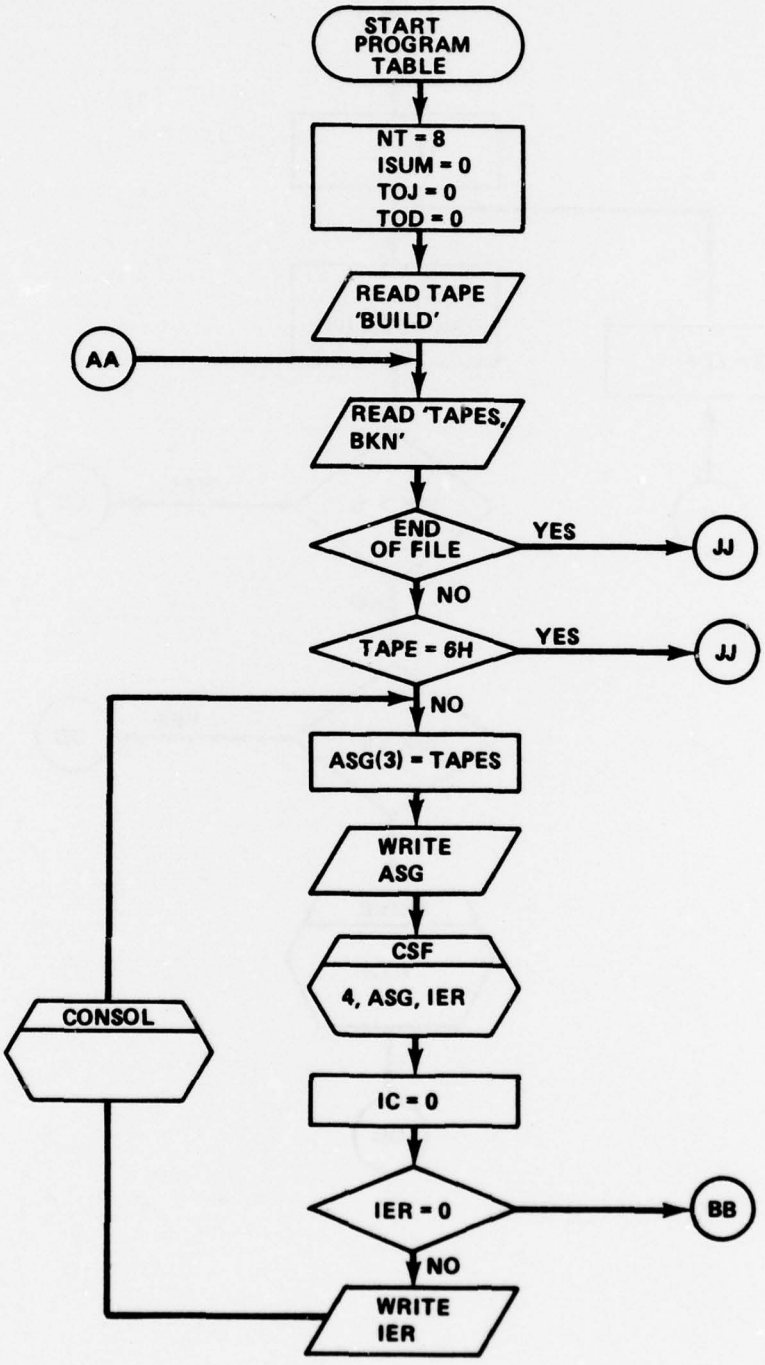
The general flow chart is as follows:

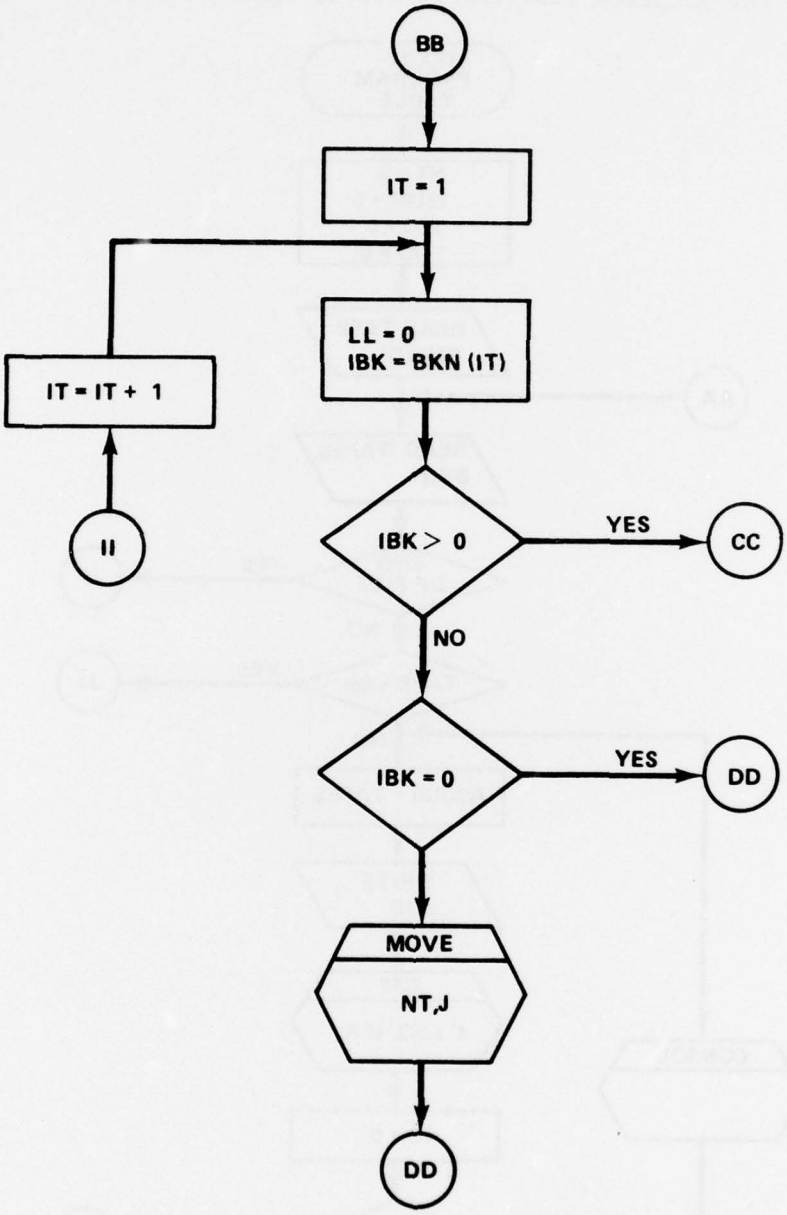

PROGRAM INITIALIZATION
READ BUILD NUMBER
99
READ TAPE NUMBER AND BOOK NUMBERS TO BE PROCESSED
TAPE NUMBER = 0 OR BLANK
YES
101
CALL PRINT TO OUTPUT TABLES
END
NO
ASSIGN TAPE NT
A
READ INFO FOR FIRST/NEXT BOOK
PROCESS & STORE INFORMATION FROM EACH RECORD EOF
B

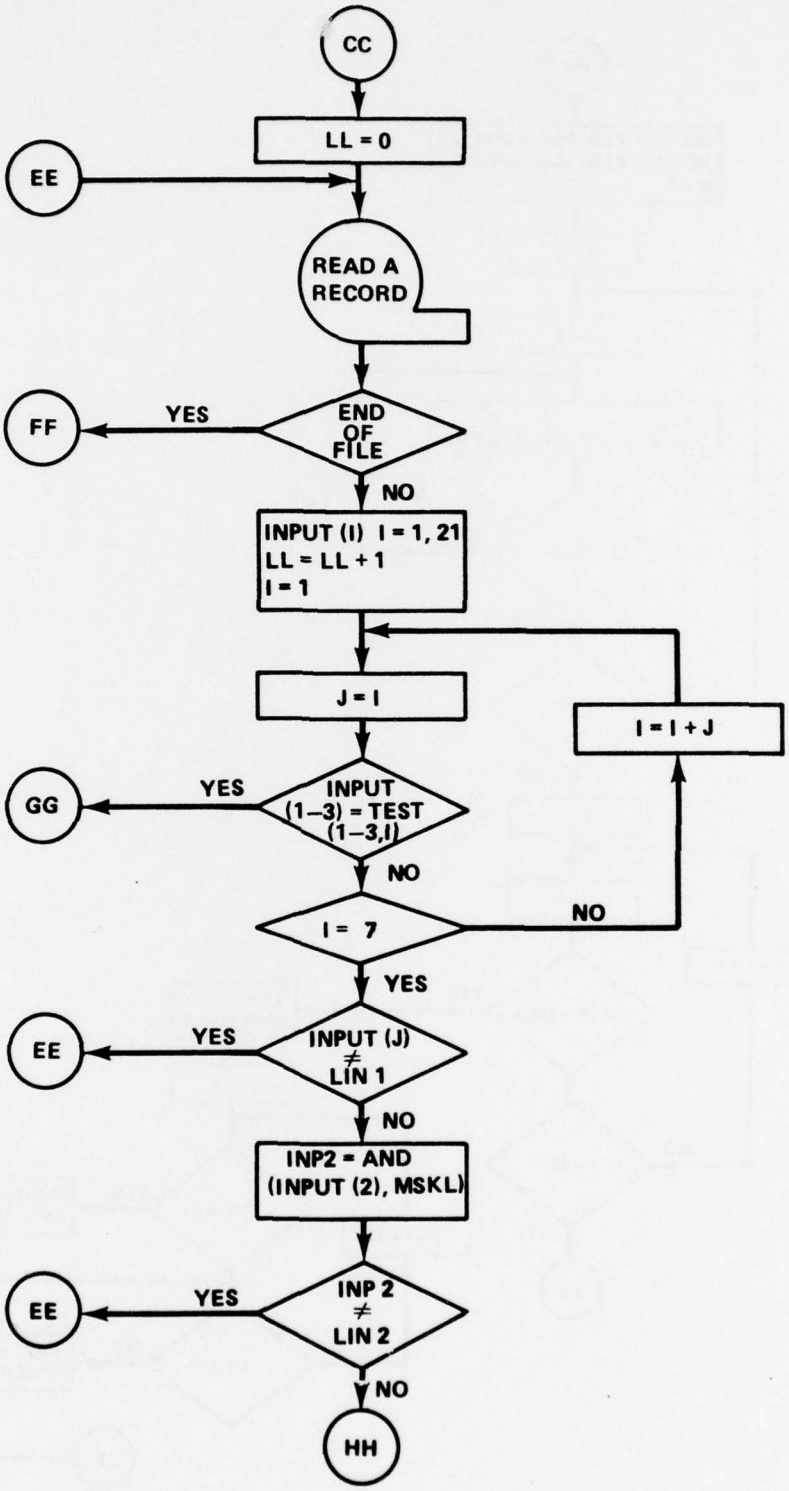

B
END OF BOOK
NO
A
YES
99

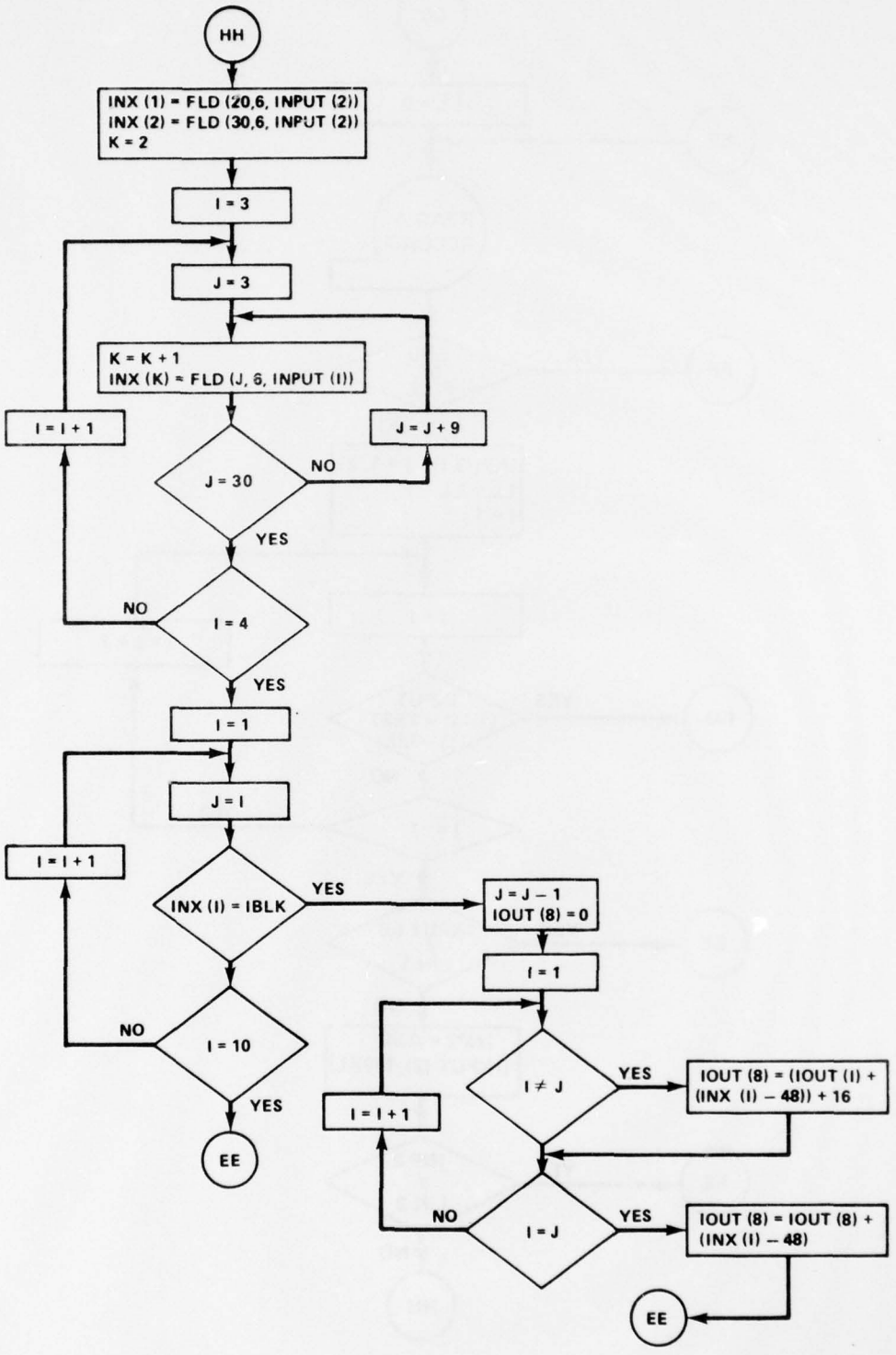
V. DETAILED FLOWCHARTS

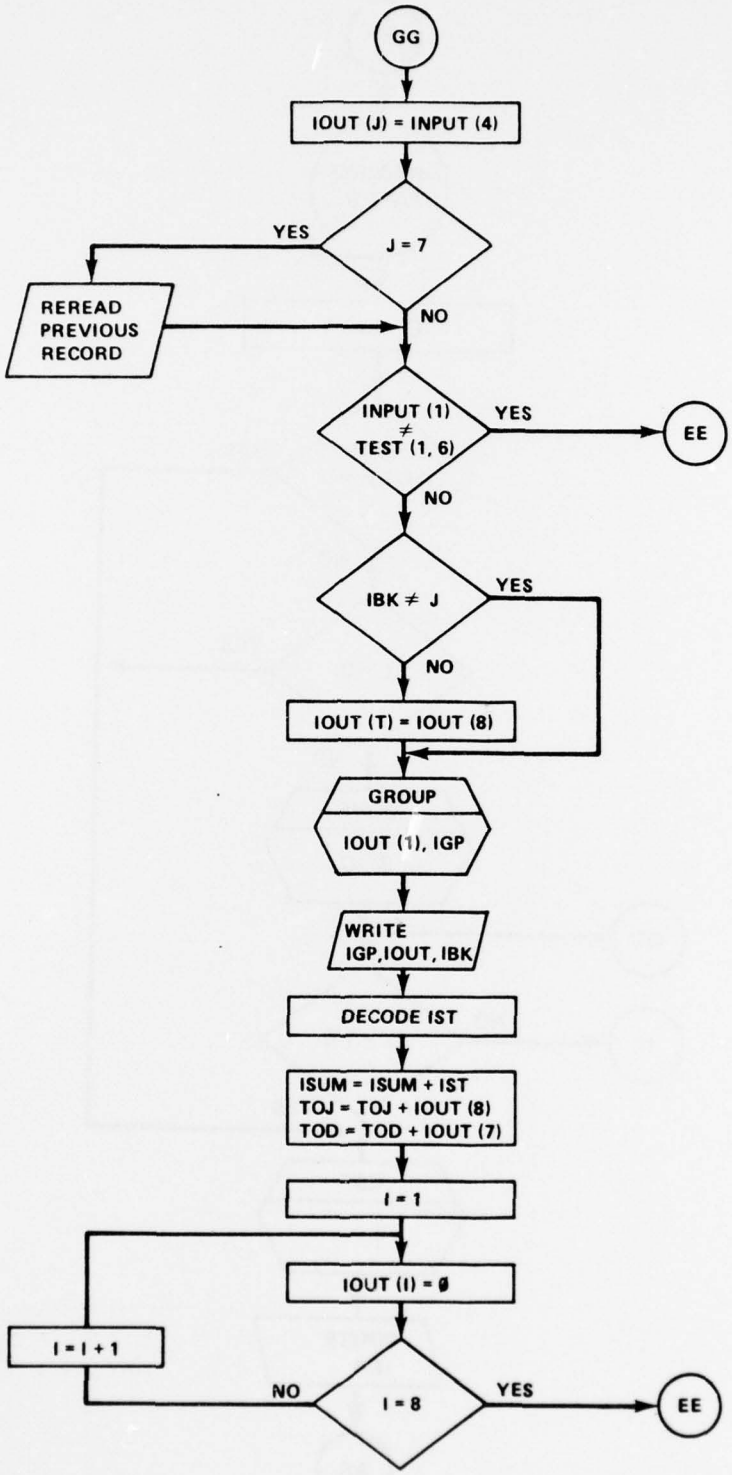
The detailed flow charts are as follows:

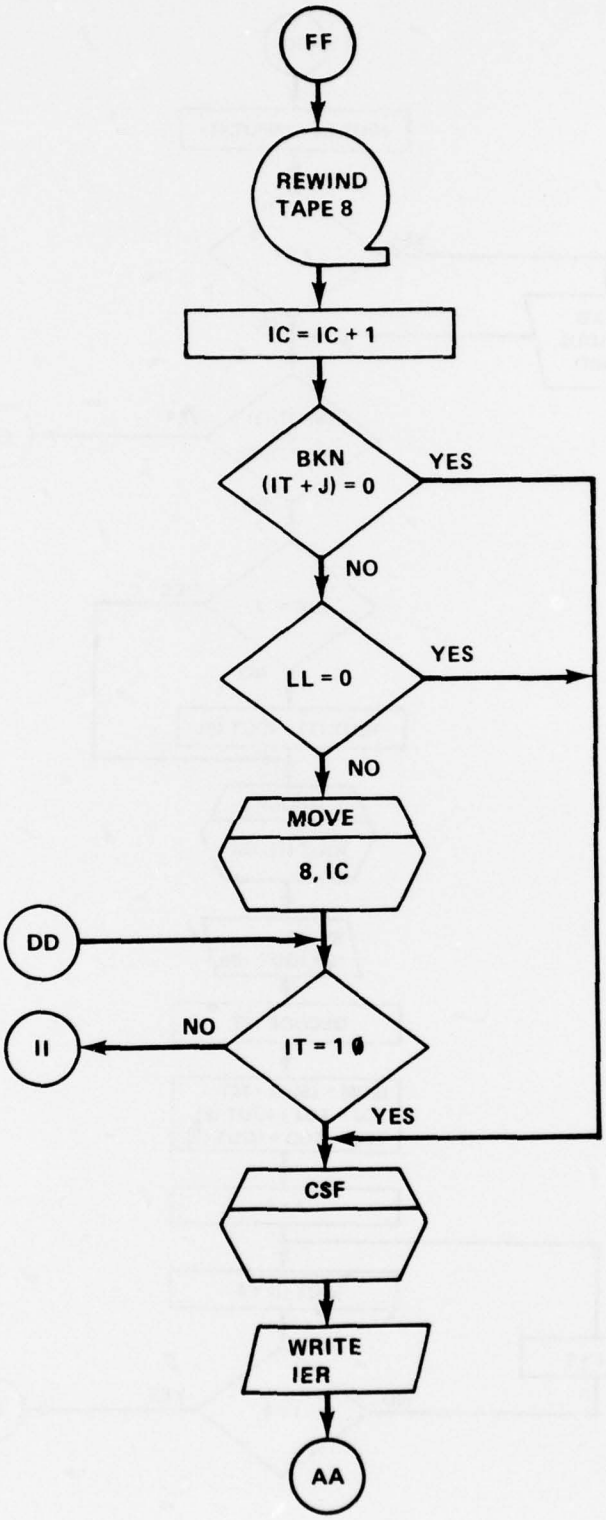


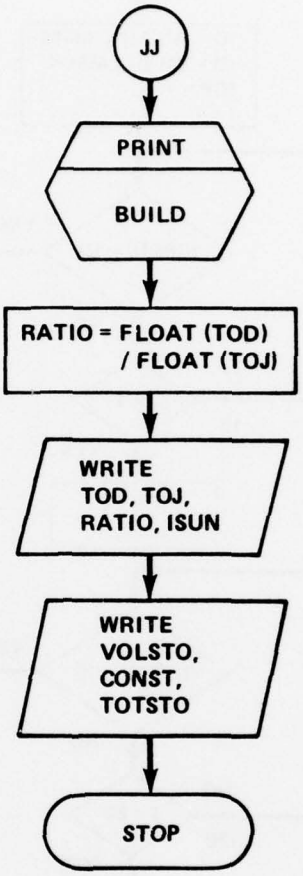

BB
IT = 1
LL = 0
IBK = BKN (IT)
IT = IT + 1
II
IBK > 0
YES
CC
NO
IBK = 0
YES
DD
MOVE
NT,J
DD

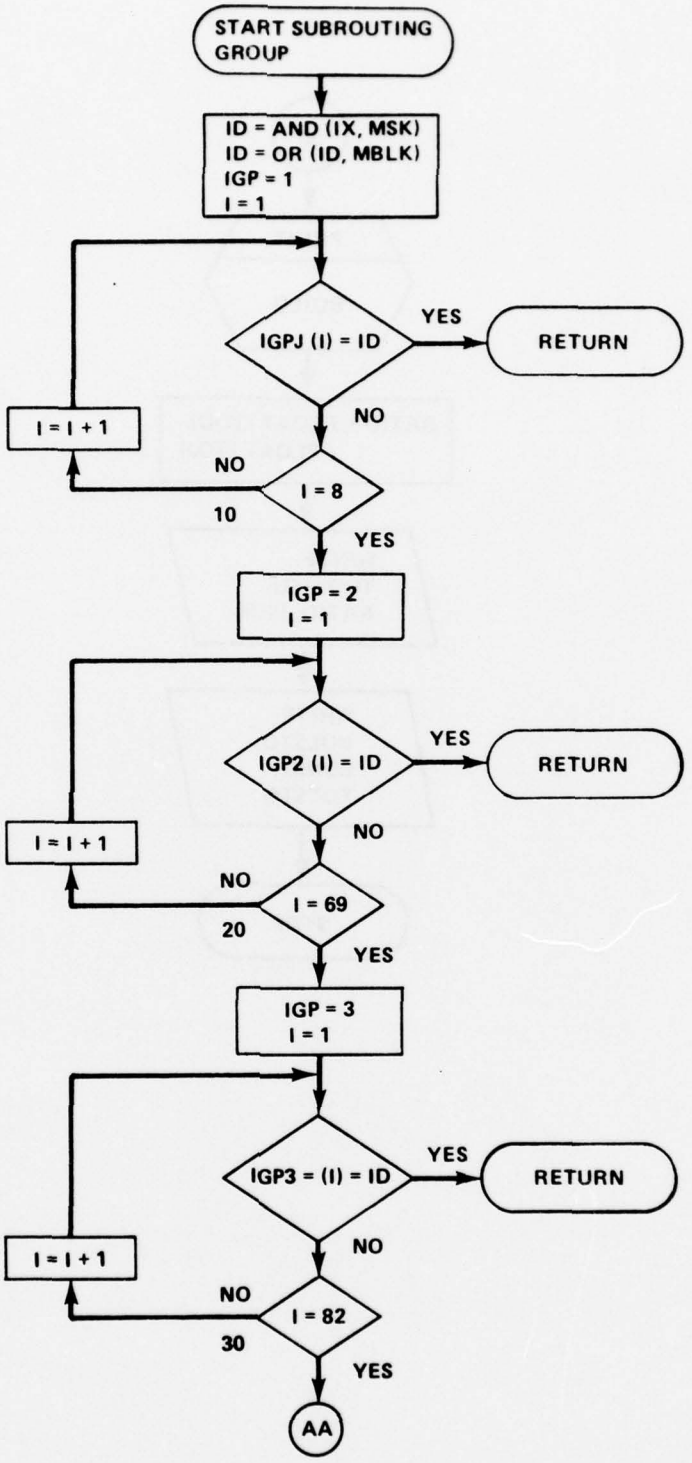

CC
LL = 0
EE
READ A RECORD
FF
YES
END OF FILE
NO
INPUT (I) I = 1, 21
LL = LL + 1
I = 1
J = I
I = I + J
GG
YES
INPUT (1–3) = TEST (1–3,I)
NO
I = 7
NO
YES
EE
YES
INPUT (J) ≠ LIN 1
NO
INP2 = AND (INPUT (2), MSKL)
EE
YES
INP 2 ≠ LIN 2
NO
HH

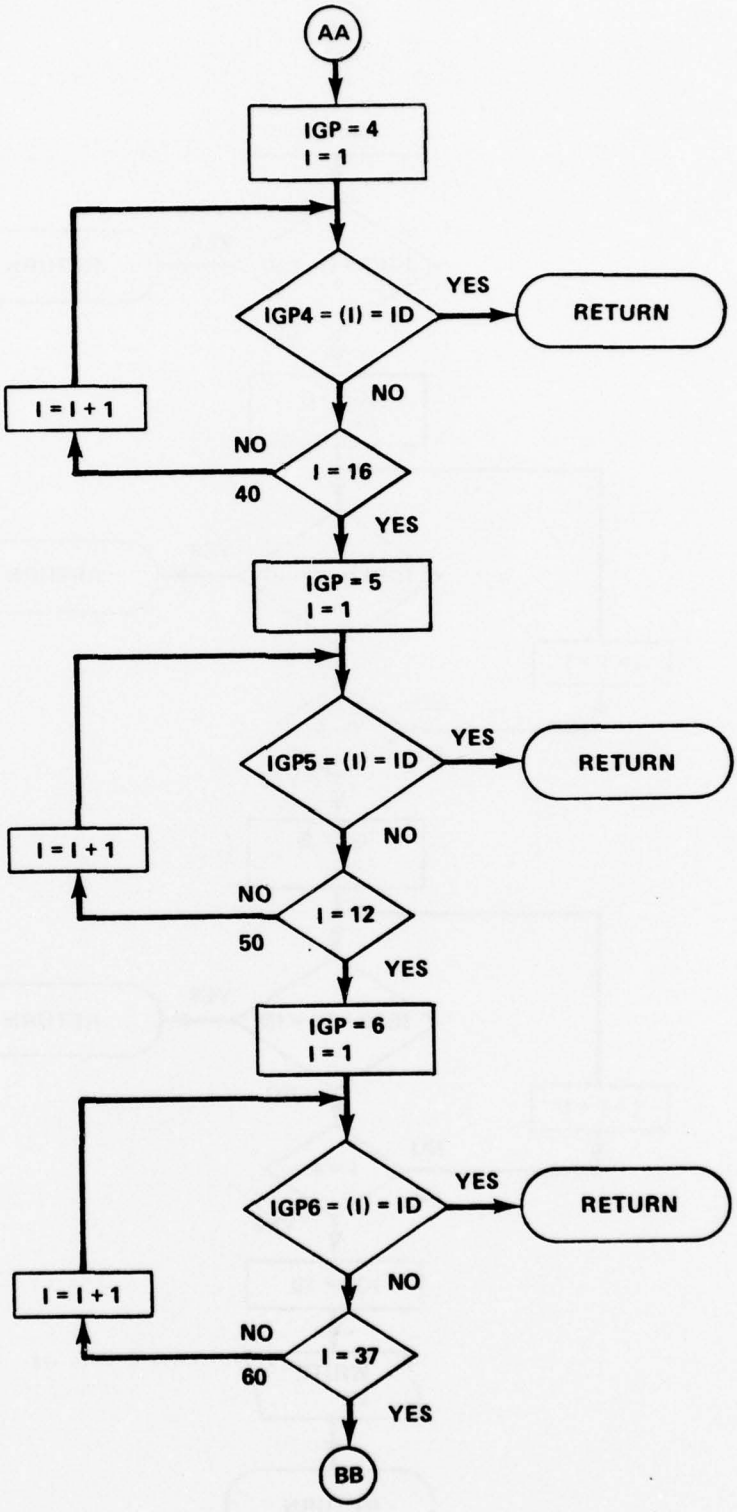

HH
INX (1) = FLD (20,6, INPUT (2))
INX (2) = FLD (30,6, INPUT (2))
K = 2
I = 3
J = 3
K = K + 1
INX (K) = FLD (J, 6, INPUT (I))
I = I + 1
J = J + 9
J = 30
NO
YES
NO
I = 4
YES
I = 1
J = I
I = I + 1
INX (I) = IBLK
YES
J = J – 1
IOUT (8) = 0
I = 1
NO
I = 10
YES
EE
I = I + 1
I ≠ J
YES
IOUT (8) = (IOUT (I) +
(INX (I) – 48)) + 16
NO
I = J
YES
IOUT (8) = IOUT (8) +
(INX (I) – 48)
EE

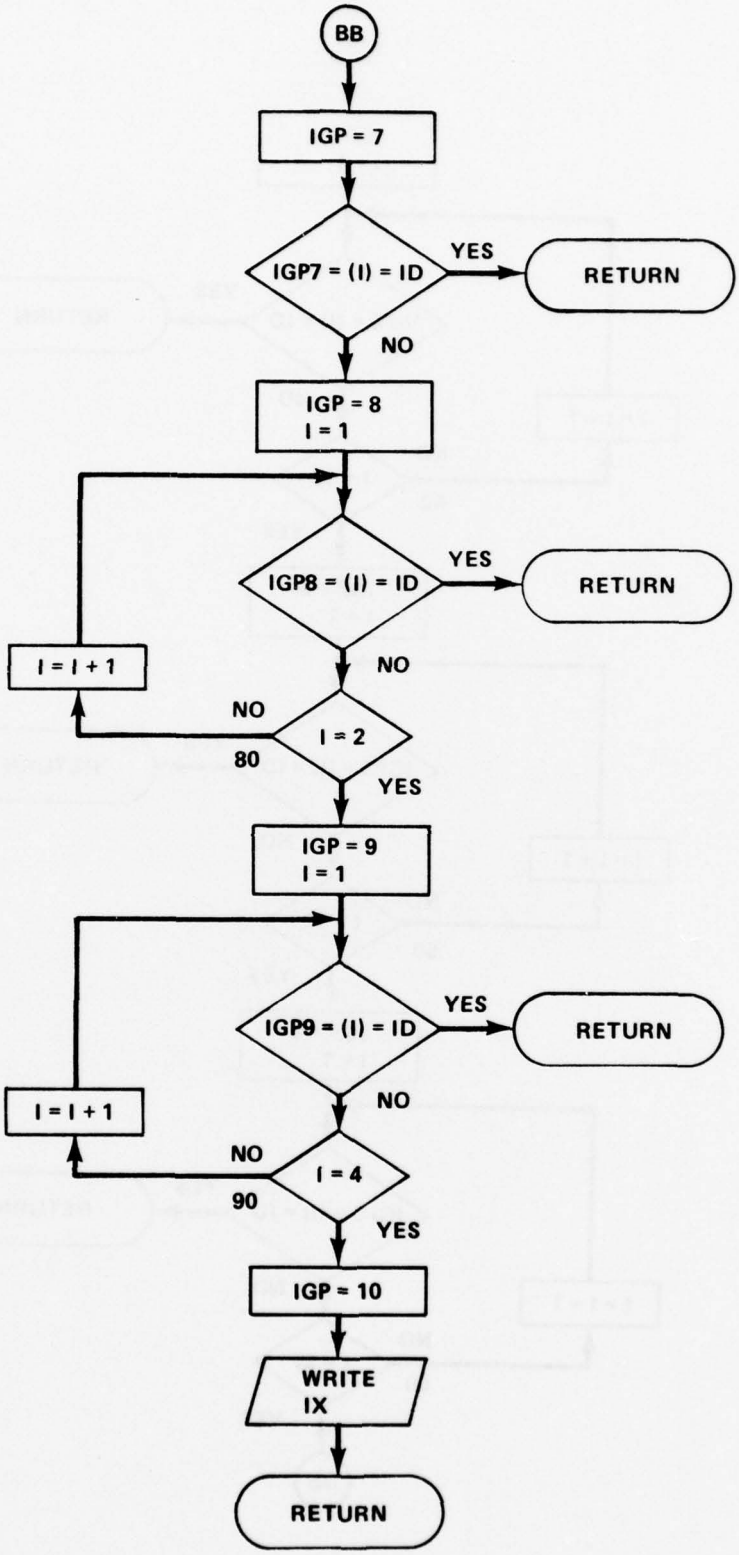

GG
IOUT (J) = INPUT (4)
J = 7
YES
NO
REREAD PREVIOUS RECORD
INPUT (1) ≠ TEST (1, 6)
YES
EE
NO
IBK ≠ J
YES
NO
IOUT (T) = IOUT (8)
GROUP
IOUT (1), IGP
WRITE IGP,IOUT, IBK
DECODE IST
ISUM = ISUM + IST
TOJ = TOJ + IOUT (8)
TOD = TOD + IOUT (7)
I = 1
IOUT (I) = 0
I = I + 1
NO
I = 8
YES
EE

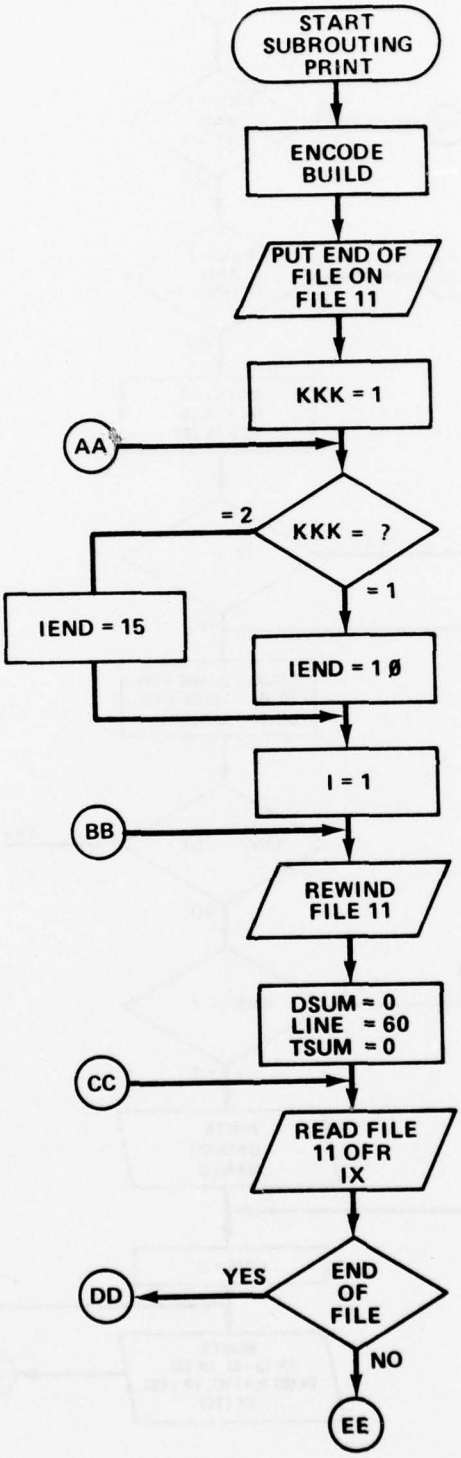

FF
REWIND TAPE 8
IC = IC + 1
BKN (IT + J) = 0
YES
NO
LL = 0
YES
NO
MOVE
8, IC
DD
II
NO
IT = 10
YES
CSF
WRITE IER
AA

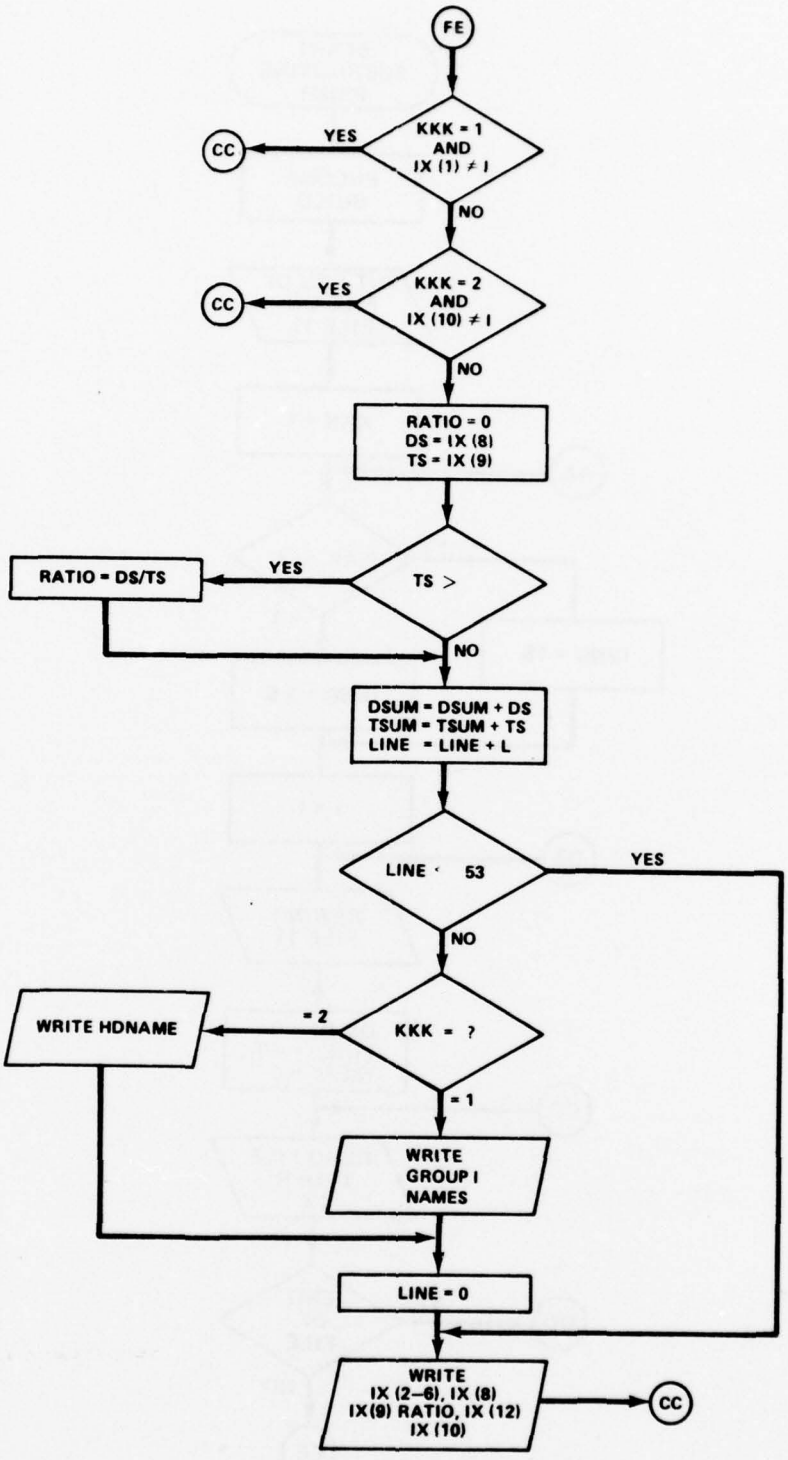

JJ
PRINT
BUILD
RATIO = FLOAT (TOD)
/ FLOAT (TOJ)
WRITE
TOD, TOJ,
RATIO, ISUN
WRITE
VOLSTO,
CONST,
TOTSTO
STOP

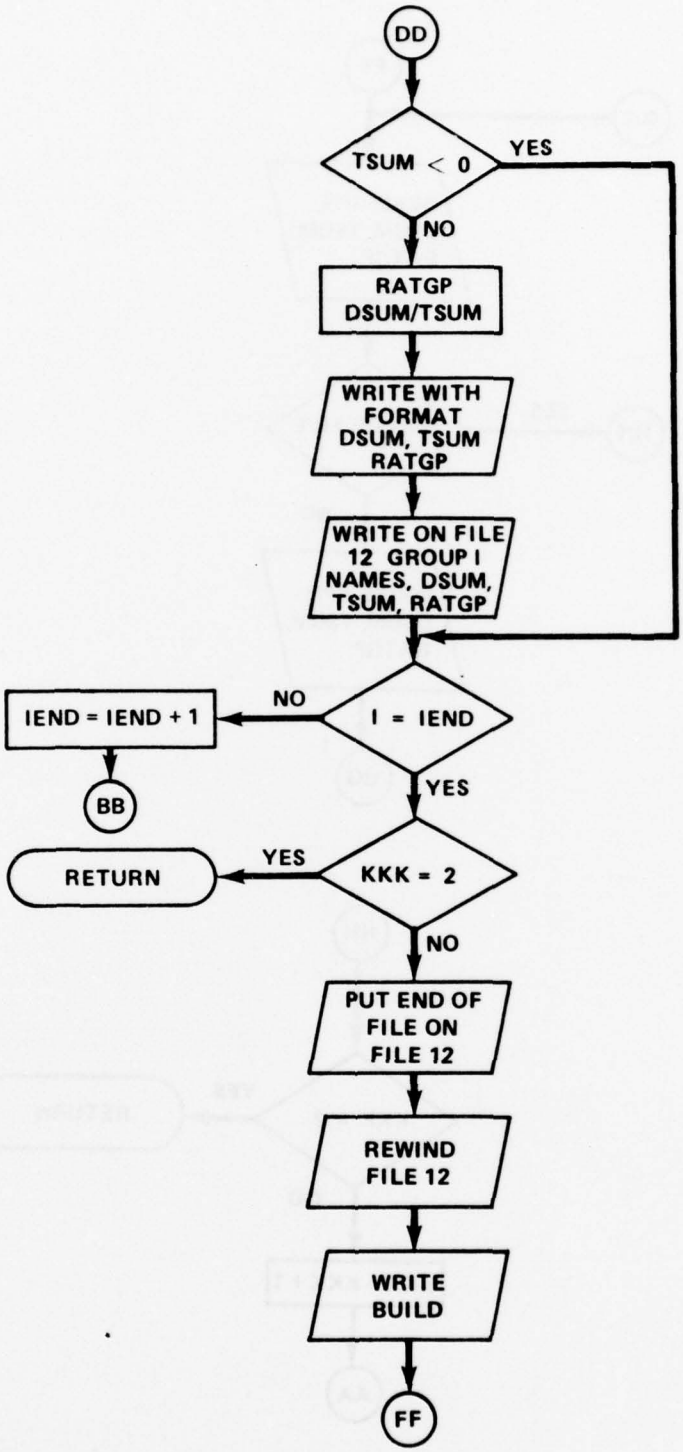

START SUBROUTING GROUP
ID = AND (IX, MSK)
ID = OR (ID, MBLK)
IGP = 1
I = 1
IGPJ (I) = ID
YES
RETURN
NO
I = I + 1
NO
I = 8
10
YES
IGP = 2
I = 1
IGP2 (I) = ID
YES
RETURN
NO
I = I + 1
NO
I = 69
20
YES
IGP = 3
I = 1
IGP3 = (I) = ID
YES
RETURN
NO
I = I + 1
NO
I = 82
30
YES
AA

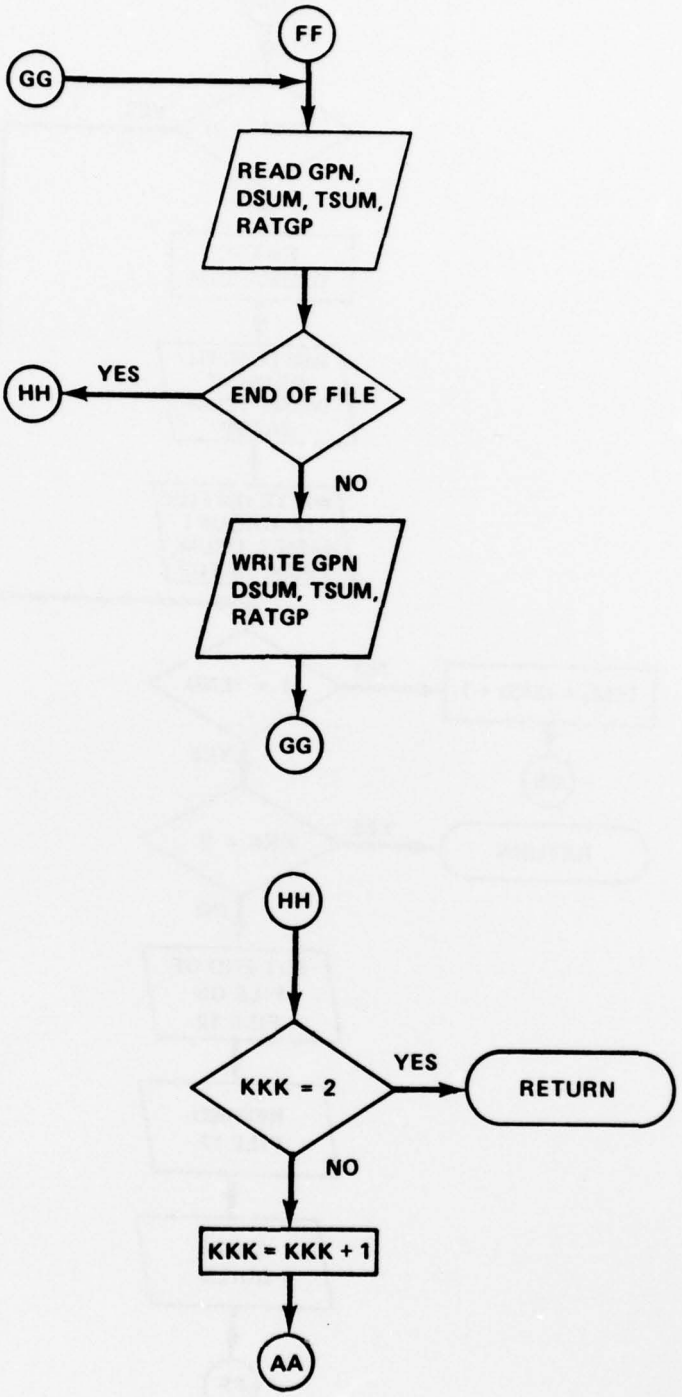

AA
IGP = 4
I = 1
IGP4 = (I) = ID
YES
RETURN
NO
I = I + 1
NO
I = 16
40
YES
IGP = 5
I = 1
IGP5 = (I) = ID
YES
RETURN
NO
I = I + 1
NO
I = 12
50
YES
IGP = 6
I = 1
IGP6 = (I) = ID
YES
RETURN
NO
I = I + 1
NO
I = 37
60
YES
BB


BB
IGP = 7
IGP7 = (I) = ID
YES
RETURN
NO
IGP = 8
I = 1
IGP8 = (I) = ID
YES
RETURN
I = I + 1
NO
NO
I = 2
80
YES
IGP = 9
I = 1
IGP9 = (I) = ID
YES
RETURN
I = I + 1
NO
NO
I = 4
90
YES
IGP = 10
WRITE
IX
RETURN


START SUBROUTING PRINT
ENCODE BUILD
PUT END OF FILE ON FILE 11
KKK = 1
AA
KKK = ?
= 2
= 1
IEND = 15
IEND = 1 Ø
I = 1
BB
REWIND FILE 11
DSUM = 0
LINE = 60
TSUM = 0
CC
READ FILE 11 OFR IX
END OF FILE
YES
DD
NO
EE


FE
KKK = 1 AND IX (1) ≠ 1
YES
CC
NO
KKK = 2 AND IX (10) ≠ 1
YES
CC
NO
RATIO = 0
DS = IX (8)
TS = IX (9)
TS >
YES
RATIO = DS/TS
NO
DSUM = DSUM + DS
TSUM = TSUM + TS
LINE = LINE + L
LINE < 53
YES
NO
KKK = ?
= 2
WRITE HDNAME
= 1
WRITE GROUP I NAMES
LINE = 0
WRITE IX (2–6), IX (8) IX(9) RATIO, IX (12) IX (10)
CC


DD
TSUM < 0
YES
NO
RATGP
DSUM/TSUM
WRITE WITH
FORMAT
DSUM, TSUM
RATGP
WRITE ON FILE
12 GROUP I
NAMES, DSUM,
TSUM, RATGP
I = IEND
NO
IEND = IEND + 1
BB
YES
KKK = 2
YES
RETURN
NO
PUT END OF
FILE ON
FILE 12
REWIND
FILE 12
WRITE
BUILD
FF


FF
GG
READ GPN,
DSUM, TSUM,
RATGP
YES
HH
END OF FILE
NO
WRITE GPN
DSUM, TSUM,
RATGP
GG
HH
KKK = 2
YES
RETURN
NO
KKK = KKK + 1
AA

Appendix A. PROGRAM LISTING

```
"FOR,IS       TABLE                                                          CSM001
C     TABLE PREPARES A TABLE OF THE CORE LOCATIONS AND LOCAL STORAGE        CSM002
C     REQUIRED BY EACH UNIT OF A BUILD.                                     CSM003
      IMPLICIT INTEGER ( A-Z )                                              CSM004
      REAL RATIO                                                            CSM005
      DATA VOLSTO/16519/,CONST/54566/                                       CSM006
      DIMENSION ASG(4),BKN(10)                                              CSM007
      DIMENSION        TEST(3,7),INPUT(21), IOUT(9)                         CSM008
      DIMENSION INX(10)                                                     CSM009
      LOGICAL FIRST /.TRUE./                                                CSM010
      DATA LIN1,LIN2,MSKL/O114111116105,O123072000000,O777777000000/        CSM011
      DATA IBLK/OOOOOOOOOOOO40/                                             CSM012
      DATA IOUT /8*0/                                                       CSM013
      DATA NUMB1 /O777777777777 /                                           CSM014
      DATA   TEST     / 6HPROGRA,6HM ID  ,6H        ,                       CSM015
     1                  6HCOMPOO,6HL ID  ,6H        ,                      CSM016
     2                  6HPROGRA,6HM SIZE,6H        ,                      CSM017
     3                  6HLOCAL ,6HSTOR. ,6HSIZE    ,                      CSM018
     4                  6HORIGIN,6H      ,6H        ,                      CSM019
     5                  6HBEGIN ,6HADDRES,6HS       ,                      CSM020
     6                  6HNUMBER,6H OF DI,6HRECT J  /                      CSM021
      DATA ASG /1HASG,T  8,T,          .  1/                                CSM022
      DATA ISKP/0/                                                          CSM023
C                                                                           CSM024
      NT=8                                                                  CSM025
      ISUM=0                                                                CSM026
      TOJ=0                                                                 CSM027
      TOD=0                                                                 CSM028
      READ(5,500) BUILD                                                     CSM029
  999  READ(5,499,END=101)TAPES,BKN                                         CSM030
      WRITE(6,996) TAPES,BKN                                                CSM031
  996 FORMAT(5HX,A6,4X,10I5)                                                CSM032
  499 FORMAT(A6,4X10I5)                                                     CSM033
      IF(TAPES      .EQ. 6H        ) GO TO 101                            CSM034
      IF(FIRST) GO TO 2                                                     CSM035
      CALL CSF(3,1HFREE,S  8.      . ,IER)                                  CSM036
C     WRITE(6,603) IER                                                      CSM037
      WRITE(6,608)                                                          CSM038
    2 ASG(3)=TAPES                                                          CSM039
      FIRST=.FALSE.                                                         CSM040
      WRITE(6,501) ASG                                                      CSM041
      CALL CSF(4,ASG,IER)                                                   CSM042
      IC=0                                                                  CSM043
      IF(IER.EQ. 0) GO TO 12                                                CSM044
C     WRITE(6,603) IER                                                      CSM045
      CALL CONSOL(43,1HWHEN TAPE DRIVE BECOMES AVAILABLE, RETURN A',6,      CSM046
     * IRET)                                                               CSM047
      GO TO 2                                                               CSM048
   12  CONTINUE                                                             CSM049
C                                                                           CSM050
      DO 100 IT=1,10                                                        CSM051
      LL=0                                                                  CSM052
      IBK=BKN(IT)                                                           CSM053
      IF(IBK .GT. 0) GO TO 3                                                CSM054
      IF(IBK.EQ.0)  GO TO 100                                               CSM055
      CALL MOVE(NT,1)                                                       CSM056
      GO TO 100                                                             CSM057
    3 LL=0                                                                  CSM058
C                                                                           CSM059
```

```
    1  CONTINUE                                                          CSH060
       READ(NT,500,END=10) (INPUT(I),I=1,21)                             CSH061
       LL=LL+1                                                           CSH062
       DO  5 I=1,7                                                       CSH063
       J=1                                                               CSH064
       IF(INPUT(1) .EQ. TEST(1,I).AND. INPUT(2) .EQ. TEST(2,I) .AND.     CSH065
      *   INPUT(3) .EQ. TEST(3,I)) GO TO 8                               CSH066
     5 CONTINUE                                                          CSH067
       IF(INPUT(1).NE.LIN1) GO TO 1                                      CSH068
       INP2=AND(INPUT(2),MSKL)                                           CSH069
       IF(INP2.NE.LIN2) GO TO 1                                          CSH070
       INX(1)=FLD(21,6,INPUT(2))                                         CSH071
       INX(2)=FLD(30,6,INPUT(2))                                         CSH072
       K=2                                                               CSH073
       DO 700 I=3,4                                                      CSH074
       DO 700 J =3,30,9                                                  CSH075
       K=K+1                                                             CSH076
       INX(K)=FLD(J,6,INPUT(I))                                          CSH077
   700 CONTINUE                                                          CSH078
       DO 6 I=1,10                                                       CSH079
       J=I                                                               CSH080
       IF(INX(I).EQ.IBLK) GO TO 7                                        CSH081
     6 CONTINUE                                                          CSH082
       GO TO 1                                                           CSH083
     7 J=J-1                                                             CSH084
       DO 705 I=1,J                                                      CSH085
       IOUT(8)=0                                                         CSH086
       IF(I.NE. J)IOUT(8)=(IOUT(8)+(INX(I)-48))*10                       CSH087
        IF(I .EQ. J)IOUT(8)=IOUT(8) +(INX(I)-48)                         CSH088
   705 CONTINUE                                                          CSH089
       GO TO 1                                                           CSH090
     8 IOUT(J)=INPUT(4)                                                  CSH091
       IF(J.NE. 3) GO TO 707                                             CSH092
       IOUT(J)=INPUT(6)                                                  CSH093
       IOUT(9)=INPUT(4)                                                  CSH094
   707 CONTINUE                                                          CSH095
       IF(J.EQ. 7) READ(30,503) IOUT(J)                                  CSH096
       IF(INPUT(1).NE. TEST(1,6)) GO TO 1                                CSH097
       IF(IBK.NE.1)GO TO 710                                             CSH098
       IOUT(7)=IOUT(8)                                                   CSH099
   710 CONTINUE                                                          CSH100
       CALL GROUP(IOUT(1),IGP)                                           CSH101
       WRITE(11) IGP,IOUT,IBK                                            CSH102
       DECODE(6,506,IOUT(3),NC,ERR=4) IST                                CSH103
     4 CONTINUE                                                          CSH104
       ISUM=ISUM+IST                                                     CSH105
       TOJ=TOJ+IOUT(8)                                                   CSH106
       TOD=TOD+IOUT(7)                                                   CSH107
       DO 9 I=1,8                                                        CSH108
     9 IOUT(I)=0                                                         CSH109
       GO TO 1                                                           CSH110
C                                                                        CSH111
    10 CONTINUE                                                          CSH112
       REWIND 8                                                          CSH113
    70 IC=IC+1                                                           CSH114
       IF(BKN(IT+1) .EQ. 0 ) GO TO 80                                    CSH115
       IF(LL .EQ. 0) GO TO 80                                            CSH116
       CALL MOVE(6,IC)                                                   CSH117
   100 CONTINUE                                                          CSH118
       GO TO 999                                                         CSH119
```

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  00  CONTINUE                                                          CSM120
 101  CONTINUE                                                          CSM121
      ENDFILE 11                                                        CSM122
      CALL PRNT(6HBUILD)                                                CSM123
      RATIO=FLOAT(TOD)/FLOAT(TOJ)                                       CSM124
      WRITE(6,004) TOD,TOJ,RATIO                                        CSM125
      TOTSTO=ISUM+VOLSTO+CONST                                          CSM126
      WRITE(6,009) ISUM                                                 CSM127
      WRITE(6,012) VOLSTO,CONST,TOTSTO                                  CSM128
  500 FORMAT(   21A6)                                                   CSM129
  501 FORMAT(1X,21A6)                                                   CSM130
  502 FORMAT(12A6)                                                      CSM131
  503 FORMAT(44X,I10)                                                   CSM132
  504 FORMAT(306,1003)                                                  CSM133
  505 FORMAT(5X,A1)                                                     CSM134
  506 FORMAT(I6)                                                        CSM135
  600 FORMAT(1H1/5X,7HPROGRAM,2X,'COMPOOL  SIZE  LOC STORAGE  ORIGIN'   CSM136
     1   '  BEGIN ADDRESS  DIR STAT  JOV STAT  BOOK NO. '/)            CSM137
  601 FORMAT(5X,A6,4X,A6,1X,A6,3X,A6,5X,A6,5X,A6,4X,4I10/)              CSM138
  602 FORMAT('     END OF FILE REACHED  ', I6)                          CSM139
  603 FORMAT(5X,'ICR= 'I3)                                              CSM140
  604 FORMAT(20X,'TOTALS',20X,I6,4X,I6,1X,F10,3//)                      CSM141
  605 FORMAT(' THE FOLLOWING SUMMARY IS FOR THE ',A3,' BUILD CONTAINED OCSM142
     *N THE FOLLOWING TAPES'/5X,10A6)                                   CSM143
  608 FORMAT(1H+,120X,1H. )                                             CSM144
  609 FORMAT(19X,' TOTAL STORAGE USED BY WCC SOFTWARE           'I8)    CSM145
 610  FORMAT(1X,4012)                                                  CSM146
 611  FORMAT(1X,10013)                                                 CSM147
  612 FORMAT(19X,' VOLATILE STORAGE FROM DRINDIX/K6ENDF         ' I8/   CSM148
     *       19X,' PROGRAM CONSTANTS FROM K6-1D CORE MAP        ' I8/  CSM149
     *       19X,' TOTAL STORAGE REQUIRED                       ' I8)  CSM150
  901 FORMAT(1X,2I5,1X,A6)                                              CSM151
      END                                                               CSM152
*FOR,IS  GROUP                                                          CSM153
      SUBROUTINE GROUP (IX,IGP)                                         CSM154
      DIMENSION  IGP1(4),IGP2(71),IGP3(82),IGP4(16), IGP5(12),IGP6(37), CSM155
     1IGP7(1),IGP8(2),IGP9(4),IGP10(18)                                 CSM156
C     REAL TIME CONTROL SYSTEM SOFTWARE    GROUP 1                      CSM157
C                                                                       CSM158
      DATA  IGP1 / 4HEXEC, 4HEMCA,  4HCSEC, 4HSSRP, 4HSSRT, 4HTRIG ,   CSM159
     *    4HGD03, 4HGOK7 /                                              CSM160
C     DATA COLLECTION SOFTWARE     GROUP 2                              CSM161
C                                                                       CSM162
      DATA  IGP2 / 4HDCAA, 4HDCDR, 4HDCFB,  4HDCEN, 4HDCFP, 4HDCLG,    CSM163
     *     4HDCMD, 4HDCMG, 4HDCMQ, 4HDCPR, 4HDCRG, 4HDCRR, 4HDCSI,    CSM164
     *     4HDCSP, 4HDCTA, 4HDEDR, 4HDCOT, 4HDFSC, 4HDCDE, 4HDRBR,    CSM165
     *     4HDRSF, 4HDSRM, 4HDSSM, 4HDTDR, 4HDSSP, 4HDTON, 4HDSPR,    CSM166
     *     4HDCMC, 4HDCRT, 4HDCTR,  4HDTQN, 4HDCPT, 4HDCTM, 4HDCRL,   CSM167
     *     4HDC01, 4HDC02, 4HDC03, 4HDC04,  4HDC05, 4HDC06, 4HDC07,   CSM168
     *     4HDC08, 4HDC09, 4HDC10, 4HDC11,  4HDC12, 4HDC13, 4HDC14,   CSM169
     *     4HDC15, 4HDC16, 4HDC17, 4HDC18,  4HDC19, 4HDC20, 4HDSPP,   CSM170
     *     4HDCAR, 4HDCAS, 4HDCFF, 4HDCMF,  4HDCRQ, 4HDC23, 4HDSDR,   CSM171
     *     4HMCIL, 4HDSP2, 4HDCDM, 4HDRDR,  4HDCNT, 4HDMWL, 4HDMDR ,  CSM172
     *     4HDCTV, 4HDC2D  /                                          CSM173
C     SURVEILLANCE OPERATIONAL SOFTWARE       GROUP 3                   CSM174
C                                                                       CSM175
      DATA  IGP3 / 4HSRAP, 4HRAMS, 4HRIOP,  4HROVL, 4HRARE, 4HRAOP,    CSM176
     *     4HAFIL, 4HALPR, 4HRFIL, 4HBIDR,  4HCMUP, 4HCORL, 4HFSEL,   CSM177
     *     4HNNTA, 4HOVAL, 4HQINT, 4HQFRM,  4HQNAP, 4HNTRR, 4HSMRM,   CSM178
     *     4HSMRR, 4HSMDM, 4HSMDR, 4HSMIR,  4HSMAB, 4HFSMC, 4HCJVL,   CSM179
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     *      4HCJUP, 4HKCJV, 4HNCJU, 4HRVAL,  4HKEUP, 4HRACQ, 4HME02,      CSM180
     *      4HMC03, 4HME19, 4HME26, 4HME33,  4HRA11, 4HRA13, 4HRA14,      CSM181
     *      4HKA15, 4HRE16, 4HRE29, 4HSE32,  4HSE38, 4HTRX1, 4HTRX2,      CSM182
     *      4HTRX3, 4HTRX4, 4HTR18, 4HTR31,  4HN48A, 4HNC62, 4HTD52,      CSM183
     *      4HTD53, 4HTDX5, 4HTDX6, 4HTDX7,  4HAC65, 4HAC66, 4HAC68,      CSM184
     *      4HAC70, 4HAC71, 4HC56A, 4HC56B,  4HCR59, 4HC64A, 4HTDLD,      CSM185
     *     4HSMFR, 4HSCON, 4HROAP,  4HTRAP, 4HNA45, 4HSTRP, 4HTA55,       CSM186
     *     4HN48C, 4HN49A, 4HNTRK, 4HECCM,                                CSM187
     *      4HRP72, 4HP738  /                                             CSM188
C      INITILIZATION SOFTWARE      GROUP 4                                CSM189
C                                                                         CSM190
       DATA  IGP4 / 4HGOK6, 4HK68F, 4HK6DC,  4HK6EN, 4HK6TC, 4HK6PL ,    CSM191
     *     4HK5DF, 4HK5CF, 4HK7EN,  4HK5ND, 4HK7DC, 4HK7TC, 4HK5SM,      CSM192
     *     4HK5SU, 4HK5EF, 4HK5PL /                                       CSM193
C      DCIP  DISPLAY AND CONTROL SOFTWARE   GROUP 5                       CSM194
C                                                                         CSM195
       DATA  IGP5 / 4HKOOK, 4HDISH, 4HDSIT,  4HDTAB, 4HDMES, 4HDTGT,     CSM196
     *     4HDSPP,4HDSP1, 4HDMDP,  4HDMDE, 4HDMDC,                       CSM197
     *      4HDASP /                                                      CSM198
C      GUIDANCE SOFTWARE    GROUP 6                                       CSM199
C                                                                         CSM200
       DATA  IGP6 / 4HPLGC, 4HLASA, 4HGIDI,  4HULNK, 4HSKUP, 4HDNLK,     CSM201
     *      4HUSAP, 4HMFIL, 4HGIDM, 4HFUSE,  4HSAPB, 4HMCGD, 4HPRIS,     CSM202
     *      4HCUGC, 4HCURL, 4HCUPY, 4HDNCL,  4HDTMA, 4HDTMT, 4HLFIL,     CSM203
     *      4HSKIL, 4HGD05, 4HTGDB, 4HTGDI,  4HTFIL, 4HTJKF, 4HOBHJ,     CSM204
     *      4HOBTJ, 4HPIGD, 4HGD01, 4HGD02,  4HHD03, 4HGD04, 4HMTML,     CSM205
     *      4HEFTM, 4HERCK, 4HTGDA  /                                     CSM206
C      GDWA II  SOFTWARE    GROUP 7                                       CSM207
C                                                                         CSM208
       DATA  IGP7 / 4HEDW2 /                                             CSM209
C      COMMUNICATIONS CONTROL SOFTWARE    GROUP 8                        CSM210
C                                                                         CSM211
       DATA  IGP8 / 4HF2CC, 4HF1CC /                                     CSM212
C                                                                         CSM213
C      IDENTIFICATION FRIEND OR FOE SOFTWARE     GROUP 9                 CSM214
       DATA IGP9/ 4HIFOR, 4HIFFR, 4HIFCS, 4HIFRP/                        CSM215
C      ENGAGEMENT CONTROL SOFTWARE GROUP 10                              CSM216
C                                                                         CSM217
       DATA IGP10 / 4HEHIT, 4HEVAL,  4HECEL, 4HEDCN, 4HEFES, 4HEHSI,     CSM218
     *      4HELGU, 4HELNP, 4HETFL,  4HETHC, 4HETPU, 4HEVLC, 4HTBQA,     CSM219
     *       4HTBQG, 4HTBQK, 4HTBQR,  4HTBQU, 4HTBQD /                    CSM220
       DATA MSK/077777777000/,MBLK/000000000505/                         CSM221
       ID= AND(IX,MSK)                                                   CSM222
       ID= OR(ID,MBLK)                                                   CSM223
       IGP=1                                                             CSM224
       DO 10 I=1,8                                                       CSM225
       IF(IGP1(I).EQ.ID) RETURN                                          CSM226
    10 CONTINUE                                                          CSM227
       IGP=2                                                             CSM228
       DO 20 I=1,71                                                      CSM229
       IF(IGP2(I).EQ.ID) RETURN                                          CSM230
    20 CONTINUE                                                          CSM231
       IGP =3                                                            CSM232
       DO 30 I=1,82                                                      CSM233
       IF(IGP3(I).EQ.ID) RETURN                                          CSM234
    30 CONTINUE                                                          CSM235
       IGP =4                                                            CSM236
       DO 40 I=1,16                                                      CSM237
       IF(IGP4(I).EQ.ID) RETURN                                          CSM238
    40 CONTINUE                                                          CSM239
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      IGP =5                                                            CSM240
      DO 50 I=1,12                                                      CSM241
      IF(IGP5(I).EQ.ID) RETURN                                          CSM242
   50 CONTINUE                                                          CSM243
      IGP =6                                                            CSM244
      DO 60 I=1,37                                                      CSM245
      IF(IGP6(I).EQ.ID) RETURN                                          CSM246
   60 CONTINUE                                                          CSM247
      IGP =7                                                            CSM248
      IF(IGP7(1).EQ.ID) RETURN                                          CSM249
      IGP =8                                                            CSM250
      DO 80 I=1,2                                                       CSM251
      IF(IGP8(I).EQ.ID) RETURN                                          CSM252
   80 CONTINUE                                                          CSM253
      IGP =9                                                            CSM254
      DO 90 I=1,4                                                       CSM255
      IF(IGP9(I) .EQ. ID) RETURN                                        CSM256
   90 CONTINUE                                                          CSM257
      IGP=10                                                            CSM258
      DO 95 I=1,18                                                      CSM259
      IF(IGP10(I).EQ. ID) RETURN                                        CSM260
   95 CONTINUE                                                          CSM261
      IGP=11                                                            CSM262
      WRITE(6,100)IX                                                    CSM263
  100 FORMAT(5X,'***** NO GROUP NUMBER FOUND FOR  'A6)                  CSM264
      RETURN                                                            CSM265
      END                                                               CSM266
*FOR,IS  PRNT                                                           CSM267
      SUBROUTINE PRNT(BUILD)                                            CSM268
      DIMENSION GPN(3),HDNAM(3)                                         CSM269
      DIMENSION       IX(11),GROUPI(3,11)                               CSM270
      DATA(GROUPI(I,1),I=1,3)/ 6HREAL T,6HIME CO,6HNTROL /              CSM271
      DATA(GROUPI(I,2),I=1,3)/ 6HDATA C,6HOLLECT,6HION   /              CSM272
      DATA(GROUPI(I,3),I=1,3)/ 6HSURVEI,6HLLANCE,6H      /              CSM273
      DATA(GROUPI(I,4),I=1,3)/ 6HINITIL,6HIZATIO,6HN     /              CSM274
      DATA(GROUPI(I,5),I=1,3)/ 6HDCIP D,6HISPLAY,6H CONTR/              CSM275
      DATA(GROUPI(I,6),I=1,3)/ 6HGUIDAN,6HCE     ,6H     /             CSM276
      DATA(GROUPI(I,7),I=1,3)/ 6HEDWA I,6HI      ,6H     /             CSM277
      DATA(GROUPI(I,8),I=1,3)/ 6HCOMMUN,6HICATIO,6HNS    /              CSM278
      DATA(GROUPI(I,9),I=1,3)/ 6HID FRI,6HEND OR,6H FOE    /           CSM279
      DATA(GROUPI(I,10),I=1,3)/6HENGAGE,6HMENT C,6HONTROL/              CSM280
      DATA(GROUPI(I,11),I=1,3)/ 6HTEST D,6HRIVERS,6H      /            CSM281
      DATA HDNAM/6H     B,6HUILD B,6HY BOOK/                            CSM282
      ENCODE(3,99,HDNAM(1))BUILD                                        CSM283
   99 FORMAT(A3)                                                        CSM284
      END FILE 11                                                       CSM285
      DO 40 KKK=1,2                                                     CSM286
      IF(KKK.EQ. 1) IEND=11                                             CSM287
      IF(KKK.EQ. 2) IEND=15                                             CSM288
      DO 30 I=1,IEND                                                    CSM289
      REWIND 11                                                         CSM290
      DSUM =0                                                           CSM291
      LINES = 60                                                        CSM292
      TSUM =0                                                           CSM293
    5  READ (11,END=20  )IX                                            CSM294
      IF(KKK .EQ. 1 .AND. IX(1) .NE. I) GO TO 5                         CSM295
      IF(KKK .EQ. 2 .AND. IX(11) .NE. I) GO TO 5                        CSM296
      RATIO=0.                                                          CSM297
      DS=IX(8)                                                          CSM298
      TS=IX(9)                                                          CSM299
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      IF(TS.GT.0.)RATIO= DS/TS                                          CSM300
      DSUM=DSUM + DS                                                    CSM301
      TSUM=TSUM + TS                                                    CSM302
      LINES=LINES + 1                                                   CSM303
      IF(LINES.LE.53 )GO TO 10                                          CSM304
      IF(KKK .EQ. 1) WRITE(6,100)(GROUPI(J,I),J=1,3)                    CSM305
      IF(KKK .EQ. 2)  WRITE(6,100)  HDNAM                               CSM306
  100 FORMAT(1H1,40X,3A6//5X,'   PROGRAM   COMPOOL SIZE DEC  SIZE OCT   CSM307
     *LOC STOR    ORIGIN  DIR STAT  TOT STAT RATIO D/T  BOOK NO. ')     CSM308
      LINES=0                                                           CSM309
   10 CONTINUE                                                          CSM310
      WRITE(6,110)(IX(J),J=2,6),IX(8),IX(9),RATIO,IX(11),IX(10)         CSM311
  110 FORMAT(9X,A6,4X,A6,4X,A6,10X,4X,A6,4X,A6,2I10,F10.3,I10,T40,A6)   CSM312
      GO TO 5                                                           CSM313
   20 IF(TSUM .LE. 0.0) GO TO 30                                        CSM314
      RATGP=DSUM/ TSUM                                                  CSM315
      WRITE(6,121) DSUM,TSUM                                            CSM316
  121 FORMAT(/5X,' TOTAL DIRECT STATEMENTS IN THIS SECTION IS ',F8.0//  CSM317
     * 5X,' TOTAL STATEMENTS IN THIS SECTION IS ' F8.0)                 CSM318
      WRITE (6,120) RATGP                                               CSM319
  120 FORMAT(// 6X'THE RATIO OF DIRECT STATEMENTS TO TOTAL STAEMENTS IS'CSM320
     12X,F5.3)                                                          CSM321
      WRITE(12)(GROUPI(J,I),J=1,3),DSUM,TSUM,RATGP                      CSM322
   30 CONTINUE                                                          CSM323
      IF(KKK.EQ. 2) RETURN                                              CSM324
      END FILE 12                                                       CSM325
      REWIND 12                                                         CSM326
      WRITE(6,130) BUILD                                                CSM327
  130 FORMAT(1H1,34X,'GROUP SUMMARY TABLE FOR ',A3,' BUILD '//          CSM328
     1 20X,'GROUP NAME',15X,'DIR STAT  TOT STAT  RATIO D/T'/)           CSM329
   35 CONTINUE                                                          CSM330
      READ(12,END=40)GPN,DSUM,TSUM,RATGP                                CSM331
      WRITE(6,140)GPN,DSUM,TSUM,RATGP                                   CSM332
      GO TO 35                                                          CSM333
  140 FORMAT(20X,3A6,5X,2F10.0,F10.3/)                                  CSM334
   40 CONTINUE                                                          CSM335
      RETURN                                                            CSM336
      END                                                               CSM337
```

Appendix B. SEARCH BY FUNCTIONAL AREA OUTPUT

GUIDANCE

PROGRAM	COMPOOL	SIZE DEC	SIZE OCT	LOC STOR	ORIGIN	DIR STAT	TOT STAT	RATIO D/T	BOOK NO.
EFIMOM	CPROID	35	000043	000021	143277	49	49	1.000	1
PLGLIE	CPROID	2274	004342	000135	144201	25	1006	.025	2
UNLNGU	CPROID	1255	002347	000070	150543	117	1227	.095	2
LASMGU	CPROID	506	000772	000053	153113	60	372	.161	2
GIGIOL	CPROID	376	000572	000043	154105	14	201	.070	2
MFILOM	CPROID	1159	002207	000136	154700	68	593	.115	2
SKUPOI	CPROID	209	000415	000027	157107	68	234	.291	2
LUGLOL	CPROID	105	000151	000025	157525	3	76	.039	2
GLNKOP	CPROID	218	000332	000015	157676	25	154	.162	2
USAPOL	CPROID	473	000731	000104	160237	0	311	.000	2
GIOMOM	CPROID	877	001555	000096	161170	32	584	.055	2
MIMLOM		118	000166	000023	162745	0	153	.000	2
LURLGU	CPROID	116	000164	000033	163153	3	95	.032	2
FUSEOP	CPROID	308	000604	000052	163321	0	273	.000	2
MCGLOG	CPROID	592	001120	000103	164215	0	352	.000	3
ERLNIE	CPROID	75	000113	000015	165345	0	107	.000	3
SAPGOE	CPROID	305	000461	000046	165502	0	178	.000	3
LUPYOU	CPROID	105	000151	000020	166163	3	80	.037	3
SKILEG	CPROID	1330	002402	000114	171275	23	893	.026	3
TGUMOM	CPROID	652	001214	000115	173757	0	244	.000	3
TGUGOE	CPROID	556	001054	000124	175173	36	397	.091	3
PIGLOP	CPROID	479	000737	000070	176251	4	299	.013	3
TGLIOC	CPROID	213	000325	000027	202613	0	139	.000	3
LFILOP	CPROID	96	000140	000021	203707	3	71	.042	3
GOOIOG	CPROID	46	000056	000017	212367	34	44	.773	3
GOO2OU	CPROID	225	000341	000026	212445	9	144	.063	3
GOO4OE	CPROID	164	000244	000016	213112	0	92	.000	3
GOO5OL	CPROID	55	000067	000020	213360	0	39	.000	3
UNCLOU	CPROID	1053	002011	000105	160334	33	657	.050	13
UTMAIE	CPROID	470	000726	000044	170347	5	432	.012	13
UTMTIP	CPROID	1351	002507	000101	200000	60	947	.063	13
UBMGOB	CPROID	66	000102	000015	202511	0	30	.000	13
UBTJOA	CPROID	62	000076	000022	203140	0	20	.000	13
IFILOA	CPROID	2306	004522	000154	203236	1034	1990	.520	13
PRISOM	CPROID	816	001460	000134	210703	64	823	.102	13
TUKFOB	CPROID	360	000550	000042	210133	0	318	.000	13

TOTAL DIRECT STATEMENTS IN THIS SECTION IS 1792.

TOTAL STATEMENTS IN THIS SECTION IS 13624.

THE RATIO OF DIRECT STATEMENTS TO TOTAL STAEMENTS IS .132

GROUP SUMMARY TABLE FOR K-6 BUILD

GROUP NAME	DIR STAT	TOT STAT	RATIO D/T
REAL TIME CONTROL	11255.	11421.	.985
DATA COLLECTION	221.	4867.	.045
SURVEILLANCE	1592.	19260.	.083
INITILIZATION	208.	208.	1.000
DCIP DISPLAY CONTR	1119.	6125.	.183
GUIDANCE	1792.	13624.	.132
EDWA II	1041.	1041.	1.000
COMMUNICATIONS	344.	3089.	.111
IC FRIEND OR FOE	165.	1556.	.106
TEST DRIVERS	618.	618.	1.000

Appendix C. SEARCH BY BOOK OUTPUT

K-S BUILD BY BOOK

PROGRAM	COMPOOL	SIZE DEC	SIZE OCT	LOC STOR	ORIGIN	DIR STAT	TOT STAT	RATIO D/T	BOOK NO.
KA15CB	CPROID	132	000204	000020	306720	0	47	.000	9
KC03CL	CPROID	89	000131	000021	320005	0	36	.000	9
KC02CL	CPROID	95	000137	000021	320137	0	34	.000	9
KC02CA	CPROID	133	000205	000022	320276	0	41	.000	9
KC70CL	CPROID	86	000126	000016	320503	0	24	.000	9
KC71CL	CPROID	157	000235	000023	320651	0	55	.000	9
L50KCB	CPROID	46	000056	000017	321006	0	41	.000	9
CK59CF	CPROID	407	000627	000042	307335	0	212	.000	9
L04KCB	CPROID	84	000124	000026	321671	0	59	.000	9
KE10CE	CPROID	395	000613	000021	322022	0	124	.000	9
KE29CA	CPROID	317	000475	000025	322656	20	133	.150	9
KA11CA	CPROID	150	000226	000021	323364	0	38	.000	9
KA13CA	CPROID	115	000163	000025	323612	0	44	.000	9
KA14CE	CPROID	565	001065	000031	323775	0	185	.000	9
KE02CD	CPROID	536	001030	000047	325071	0	211	.000	9
KE03CA	CPROID	82	000122	000025	326121	0	26	.000	9
KE10CF	CPROID	357	000545	000032	310171	0	107	.000	9
KE20CA	CPROID	162	000242	000020	326710	0	58	.000	9
KE33CD	CPROID	75	000113	000016	327152	0	21	.000	9
SE30CA	CPROID	370	000562	000035	327205	55	225	.244	9
L50B2C	CPROID	65	000101	000017	330047	0	45	.000	9
KP7C0C	CPROID	65	000101	000016	330150	0	42	.000	9
K73D0A	CPROID	65	000125	000021	330251	0	60	.000	9

TOTAL DIRECT STATEMENTS IN THIS SECTION IS 75.

TOTAL STATEMENTS IN THIS SECTION IS 1868.

THE RATIO OF DIRECT STATEMENTS TO TOTAL STAEMENTS IS .040

K-6 BUILD BY BOOK

PROGRAM	COMPOOL SIZE	DEC SIZE	OCT LOC STOR	ORIGIN	DIR STAT	TOT STAT	RATIO D/T	BOOK NO.
UNCLOU	CPROID	1033	002011	000105	160334	33	657	.050	13
UIMAIL	CPROID	470	000726	000044	170347	5	432	.012	13
UIMIIF	CPROID	1351	002507	000101	200000	60	947	.063	13
UBMOU	CPROID	00	000102	000015	202511	0	30	.000	13
UBTOUA	CPROID	02	000076	000022	203140	0	20	.000	13
IFILOA	CPROID	2306	004522	000134	203236	1034	1990	.520	13
PRISOM	CPROID	816	001440	000134	210703	84	823	.102	13
IUAFUU	CPROID	300	000550	000042	210133	0	318	.000	13

TOTAL DIRECT STATEMENTS IN THIS SECTION IS 1216.

TOTAL STATEMENTS IN THIS SECTION IS 5217.

THE RATIO OF DIRECT STATEMENTS TO TOTAL STAEMENTS IS .233

TOTALS	18355	61807	.297

TOTAL STORAGE USED BY ACC SOFTWARE 89609
VOLATILE STORAGE FROM DRINDIX/KOENOF 18519
PROGRAM CONSTANTS FROM K6-1D CORE MAP 54566
TOTAL STORAGE REQUIRED 162094

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